

REMARKS

By the foregoing amendment, claims 1, 3, 5, and 6 have been amended. Claims 1-3, 5-7, 9, and 10 are pending and under consideration.

Support for the present amendment can be found throughout the specification as filed, e.g., at Example 16 on page 38. Applicants note that the amendment adds no new matter.

RESPONSE TO THE OFFICE ACTION

Claim Rejections under 35 U.S.C. § 112, Second Paragraph

The Office Action rejects claim 7 under 35 U.S.C. § 112 as allegedly being indefinite. In particular, the Action asserts that the phrase “wherein the stability of the vitamin is improved” is unclear.

In response, Applicants submit that claim 7 is clear and definite and that one of ordinary skill in the art would immediately know what is meant by the phrase “wherein the stability of the vitamin is improved.” Applicants further submit that the phrase “wherein the stability of the vitamin is improved” is also clear and definite in view of the specification. In particular, the specification describes how compounds of the claimed subject matter improve the stability of a vitamin, for example, in Example 16 on page 38.

Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim Rejections under 35 U.S.C. § 112, First Paragraph

The Office Action rejects claim 6 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. In particular, the Office Action states that

while the specification does enable improving the stability of calcium pantothenate from thermal decomposition and decomposition initiated by U.V. light in a cosmetic, a medicament, a foodstuff, and/or a feed by adding the compound of general formula (V) or a salt thereof to said cosmetic, medicament, foodstuff, and/or feed, the specification is allegedly not enabled for stabilizing all vitamins in said composition by adding said compound or a salt thereof to a cosmetic, a medicament, a foodstuff, and/or a feed.

In response, and without acquiescing to the propriety of the rejection, Applicants submit that the specification does enable claim 6, as amended, for its full scope. In particular, Applicants submit that Example 16 on page 38 and Figures 18-19 exemplify the ability of a compound of the general formula (V) to improve the stability of calcium pantothenate (vitamin B5).

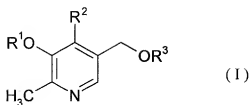
Accordingly, Applicants respectfully request reconsideration of the rejection under 35 U.S.C. § 112, first paragraph, and withdrawal of the same.

Claim Rejections Under 35 U.S.C. § 102(b)

The Office Action rejects claims 1-3 and 5 under 35 U.S.C. § 102(b) as allegedly anticipated by Mineura et al. (Nippon Nogei Kagaku Kaishi (1972), 46(3), 111-18 Abstract Only). In particular, the Action asserts that Mineura et al. anticipates claims 1-3 and 5 by allegedly disclosing Applicants' claimed pyridoxine 3,4'-cyclic phosphate.

In response, Applicants submit that claims 1-3 and 5 are not anticipated by Mineura et al. In particular, Applicants submit that Mineura discloses the study of conditions for the production of pyridoxal phosphate from pyridoxine 4',5'-cyclic phosphate (emphasis added), not pyridoxine 3,4'-cyclic phosphate or any "compound represented by the following general formula (I) or a

salt thereof:

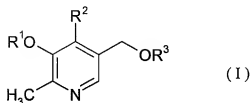


wherein R¹ represents a cyclic phosphate group bound to R²; R² represents -CH₂OH, -CHO, -CH₂NH₂, -CH₂-amino acid residue, or -CH₂-OPO₂H; and R³ represents a hydrogen atom, or -PO₃H₂."

Applicants further submit that the Abstract of the Mineura document cited in the rejection includes the chemical structure for RN 36944-85-1, a pyridoxine 3,4'-cyclic phosphate. The association of this chemical structure with Mineura's disclosure of "pyridoxine 4',5'-cyclic phosphate" is therefore in obvious error. One of ordinary skill in the art would immediately know that the chemical structure for RN 36944-85-1 is not "pyridoxine 4',5'-cyclic phosphate." Accordingly, Mineura does not disclose a compound which is encompassed by Applicants' claimed subject matter.

Furthermore, Applicants submit herewith a copy of Mineura et al. (Nippon Nogei Kagaku Kaishi 46(3):103-110, 1972), i.e., Part I. of Mineura's "Studies on the Production of Pyridoxal Phosphate." This article is also from the same issue of the same journal cited in the instant rejection. Applicants submit that the chemical structure of the "pyridoxine 4',5'-cyclic phosphate" disclosed in the Abstract is actually the structure set forth in Figure 1 on page 104 of Part I of Mineura's studies, and not the structure associated with RN 36944-85-1 as set forth incorrectly in the Abstract cited by the Office.

In further support thereof, Applicants submit the chemical structure of RN 14141-47-0, which structure is associated with Part I of Mineura's studies, i.e., Mineura et al. (Nippon Noge Kagaku Kaishi 46(3):103-110, 1972). This structure is the same as that set forth in Figure 1 on page 104, and the same as the "pyridoxine 4',5'-cyclic phosphate" disclosed in the Mineura Abstract cited in the rejection. As can be clearly seen, the chemical structure for "pyridoxine 4',5'-cyclic phosphate" is not the same as Applicant's claimed pyridoxine 3,4'-cyclic phosphate and is not encompassed by any of Applicants' claimed "compound[s] represented by the following general formula (I) or a salt thereof:



wherein R¹ represents a cyclic phosphate group bound to R²; R² represents -CH₂OH, -CHO, -CH₂NH₂, -CH₂-amino acid residue, or -CH₂-OPO₂H; and R³ represents a hydrogen atom, or -PO₃H₂."

Moreover, Applicants note that the Abstract cited by the Patent & Trademark Office does not put the public in possession of Applicants' claimed subject matter. It fails to teach how to make Applicants' claimed subject matter and any other relevant information. Applicants respectfully submit that the chemical structure disclosed in the Mineura Abstract cited in the rejection can at best be characterized as a misrepresentation similar to a typographical error. Applicants note that for such erroneous disclosure, the courts have given clear guidance how to evaluate such misrepresentations.

In *In re Yale* (434 F.2d 666, 168 U.S.P.Q. 46 (C.C.P.A. 1970)), the applicant sought a patent on the compound 3-bromo-3-chloro-1,1,1,2,2-pentafluoropropane, which has the formula $\text{CF}_3\text{CF}_2\text{CHClBr}$. A publication by Clements reported the results of certain research and listed $\text{CF}_3\text{CF}_2\text{CHClBr}$ as one of nine compounds plotted on a graph. The applicant established that the listing of the compound was a typographical error that would be apparent to one of ordinary skill in the art. The Court of Customs and Patent Appeals held that the Clements article did not adequately disclose the claimed compound and stated that “[s]ince it is an obvious error, it cannot be said that one of ordinary skill in the art would do anything more than mentally disregard [it] or mentally substitute [the intended formula] in its place” (434 F.2d at 668-669).

As in *In re Yale*, Applicants respectfully submit that one of ordinary skill in the art upon reviewing the Mineura Abstract cited by the Office would *mentally disregard* or *mentally substitute* the erroneous chemical structure associated with the disclosure of “pyridoxine 4',5'-cyclic phosphate.”

At least in view of the foregoing, Applicants submit that the claimed subject matter is not anticipated by Mineura et al. (Nippon Nogei Kagaku Kaishi (1972), 46(3) 111-18 Abstract Only). Applicants respectfully request reconsideration of the rejection under 35 U.S.C. § 102(b) and withdrawal of the same.

Claim Rejections Under 35 U.S.C. § 103(a)

The Office Action rejects claim 7 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mineura et al. (Nippon Nogei Kagaku Kaishi (1972), 46(3), 111-18 Abstract Only). In particular, the Action asserts that Mineura discloses a compound represented by the general formula (V) wherein R^7 represents a cyclic phosphate group bound to R^8 ; R^8 represents –

CH₂OH; and R⁹ represents a hydrogen atom. The Office concedes, however, that Mineura fails to teach a composition which comprises another "vitamin." Nevertheless, the Office asserts that it would have been obvious to prepare a composition comprising a combination of the compound disclosed in Mineura with another vitamin with "the same utility in order to use it in nutritive, food stuff or a medicament" (see paragraph bridging pages 9-10 of the Office Action).

In response, Applicants submit that claim 7 is not unpatentable over Mineura for at least the reasons set forth above in response to the rejection under 35 U.S.C. § 102. In particular, Applicants submit that Mineura fails to disclose a compound encompassed by the claimed subject matter. Accordingly, Applicants submit that Mineura fails to meet each and every limitation of the claimed subject matter.

Furthermore, even if Mineura were to disclose a compound encompassed by Applicants' claimed subject matter, Mineura fails to disclose or suggest the advantageous effects of the claimed compounds and/or compositions, including the stability of the claimed subject matter and the ability of the claimed subject matter to stabilize compositions comprising Applicants' claimed compounds and one or more kinds of vitamins. In view of the unexpected, advantageous effects of Applicants' claimed compounds, and the lack of any disclosure of such advantageous effects with respect to the compounds disclosed in Mineura (which compounds are not even the same as those encompassed by Applicants' claimed subject matter), it would not have been obvious to one of ordinary skill in the art to prepare a composition comprising a combination of Mineura's compound and another vitamin.

Based at least on the foregoing, Applicants submit that the claimed subject matter is not unpatentable over Mineura. Applicants respectfully request reconsideration of the rejection of claim 7 under 35 U.S.C. 103, and withdrawal of the same.

The Office Action rejects claims 9-10 under 35 U.S.C. § 103(a) as allegedly being unpatentable over FR 2349330 in view of Mineura et al. (Nippon Nogei Kagaku Kaishi (1972), 111-18 Abstract Only). In particular, the Action asserts that FR 2349330 discloses compositions comprising a pyridoxine and an antioxidant which can be used to treat hyperlipidemia. However, the Action concedes that FR 2349330 fails to teach a specific pyridoxine encompassed by the claimed subject matter. For the specific pyridoxine, the rejection relies on Mineura.

In response, Applicants submit that claims 9-10 are not unpatentable over FR 2349330 in view of Minuera for at least the reasons set forth above in response to the rejection under 35 U.S.C. § 102.

Applicants further submit that Mineura, which discloses a compound different from that encompassed by the claimed subject matter, fails to cure the deficiencies of FR 2349330. Applicants further submit that the cited art, either alone or in combination, fails to disclose an agent comprising arbutin. Thus, the cited documents in combination fail to meet each and every limitation of the claims, especially with respect to claim 10.

Applicants further submit that one of ordinary skill in the art would not have been motivated to combine FR 2349330, which is directed to the treatment of lipidemia, with Mineura, which is silent with respect to any potential therapeutic properties of the disclosed compound and with respect to the advantageous effects of the claimed subject matter, e.g., whitening.

Based at least on the foregoing, Applicants submit that the claimed subject matter is not unpatentable over FR 2349330 in view of Mineura. Applicants respectfully request reconsideration of the rejection of claim 7 under 35 U.S.C. 103, and withdrawal of the same.

CONCLUSION

In view of the foregoing remarks and amendments, Applicants respectfully submit that the claims are in condition for allowance.

No fee is believed due at this time. However, the Office is authorized to charge any required fee to Deposit Account No. 19-0089.

If there should be any questions which can be resolved by telephone, the Examiner is respectfully invited to contact the undersigned at the telephone number listed below.

Respectfully Submitted,
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